

# TORNADO BASEBALL PARTS CATALOG



NO. 0605 UPRIGHT



NO. 0607 COCKTAIL TABLE

MIDWAY MFG. CO.

10750 WEST GRAND AVENUE FRANKLIN PARK, ILLINOIS, 60131, U. S. A.

PHONE: (312) 451-1360

CABLE ADDRESS: MIDCO

TELEX NO.: 72-1596

# TABLE OF CONTENTS

	Page No.
GENERAL INSTRUCTIONS	1
CONTROL POT & SWITCH ADJUSTMENTS	2
RAMs, ROMs & PROMs TESTING	3—4
SERVICE BULLETIN	5
NO. 0605 — UPRIGHT CONTROL SHELF	6—7
NO. 0607 — COCKTAIL TABLE CONTROL SHELF	8—9
ADDITIONAL PARTS LIST	10—12
GAME BOARD COMPONENTS LAYOUT (COCKTAIL)	13
GAME BOARD COMPONENTS LAYOUT (UPRIGHT)	14

#### GENERAL INSTRUCTIONS FOR "TORNADO BASEBALL"

#### **INSTALLATION:**

- 1. Remove shipping cleats located on the bottom of the cabinet.
- 2. The power is controlled by a switch located on top of the cabinet. Plug into A.C. only, 115 volts 60 cycles. In low lines areas, (105 volts or less) a boost in the output voltage of the transformer may be achieved by removing the wire from the 115 volt tap of the transformer, and rewiring to the 105 volt position.
- 3. In event the game is tilted, or the line cord is removed, and credit (Innings) accumulated will reset to zero.

#### VOLTAGE CONTROL POT:

Located on Power Supply Board (P.C. 80-905) and is preset at the factory. This pot should not be tampered with unless the factory Service Department is contacted.

#### INNING AND COIN ADJUSTMENT SWITCHES:

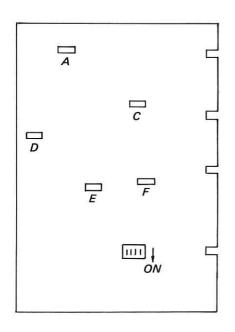
Located on Game Logic Board (P.C. 605-905B) and may be adjusted as indicated on separate instruction sheet located in back box area.

#### TONE, WHISTLE, SIREN, LOGIC, CHEER AND MASTER VOLUME CONTROL POTS:

Located on Game Logic Board (P.C. 605-905B) and may be adjusted as desired by rotating pots as indicated on separate instructions in back box area.

#### WARNING

THIS GAME MUST BE GROUNDED. FAILURE TO DO SO MAY RESULT IN DESTRUCTION TO ELECTRONIC COMPONENTS.



NOTE: CLOCKWISE ROTATION IDENTIFIED AS VIEWED FROM POT FACE.

- A. SIREN VOLUME: To increase rotate clockwise.
- C. MASTER VOLUME: To increase all volumes rotate clockwise.
- D. CHEER VOLUME: To increase rotate clockwise.
- E. WHISTLE VOLUME: To increase rotate clockwise.
- F. LOGIC VOLUME: To increase "HIT & STRIKE" volume rotate clockwise.
- G. GAME CONTROL SWITCH: May be set at 1, 2, 3 or 4 coins per play.

# GAME CONTROL SWITCH ADJUSTMENTS GAME CONTROL SWITCH ADJUSTMENTS

		2	3	4	5
1 COIN	1 INNING	ON	ON	ON	ON
1 COIN	2 INNING	ON	ON	OFF	ON
1 COIN	4 INNING	ON	ON	ON	OFF
1 COIN	9 INNING	ON	ON	OFF	OFF
2 COINS	1 INNING	OFF	ON	ON	ON
2 COINS	2 INNING	OFF	ON	OFF	ON
2 COINS	4 INNING	OFF	ON	ON	OFF
2 COINS	9 INNING	OFF	ON	OFF	OFF
3 COINS	1 INNING	ON	OFF	ON	ON
3 COINS	2 INNING	ON	OFF	OFF	ON
3 COINS	4 INNING	ON	OFF	ON	OFF
3 COINS	9 INNING	ON	OFF	OFF	OFF
4 COINS	1 INNING	OFF	OFF	ON	ON
4 COINS	2 INNING	OFF	OFF	OFF	ON
4 COINS	4 INNING	OFF	OFF	ON	OFF
4 COINS	9 INNING	OFF	OFF	OFF	OFF

NOTE: Switches 1 - 6 - 7 should remain in "ON" position.

#### RAMs, ROMs, and PROMs TESTING

GAME: Tornado Baseball

SUBJECT: RAMs, ROMs, and PROMs

The Tornado Baseball game micro-computer system has been programmed to detect a defective RAM, ROM, and PROM. To utilize the test, proceed as follows:

- 1. Set switch #6 to the 'OFF' position on the game board (PC 605-900).
- 2. Activate coin door, tilt switch.
- 3. The RAM test sequence will scan and vertical lines will appear.
- 4. After RAM test sequence is completed and a RAM is defective, 16 vertical columns will appear. (Refer to figure 1 for method of locating bad RAM).\*
- 5. When 16 vertical columns do not appear after RAM sequence, this indicates all RAMs are good.
- 6. When RAM test is completed and all RAMs are good, the TV screen will go blank and now indicate a bad ROM or PROM by displaying letters locating it.
- 7. When all ROMs and PROMs are good, the blank TV screen will display nothing.
- 8. Return switch #6 to 'ON' position (PC 605-900).
- 9. Activate the tilt switch to return game to normal operation.

NOTE - All RAMs must be good before ROM or PROM test can be made.

GAME: Tornado Baseball

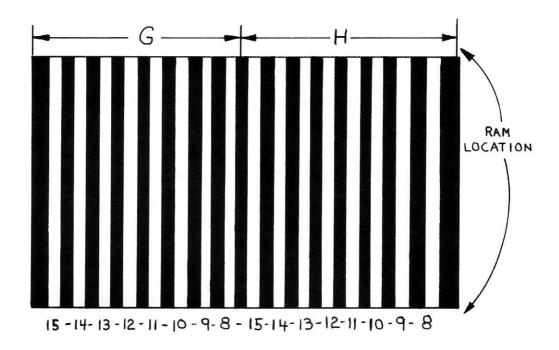


Figure One — Method of Locating a Bad RAM

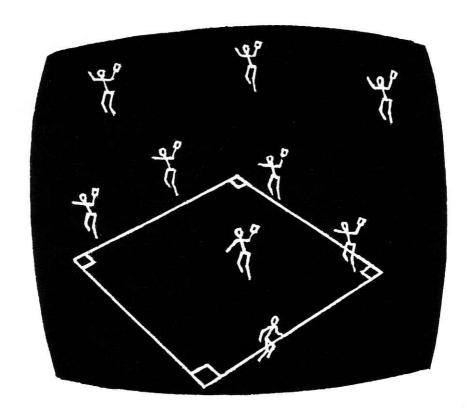
- 1. When one or more columns are missing or altered, this would indicate a RAM problem.
- 2. Use Figure One TV display to determine location of faulty RAMs.

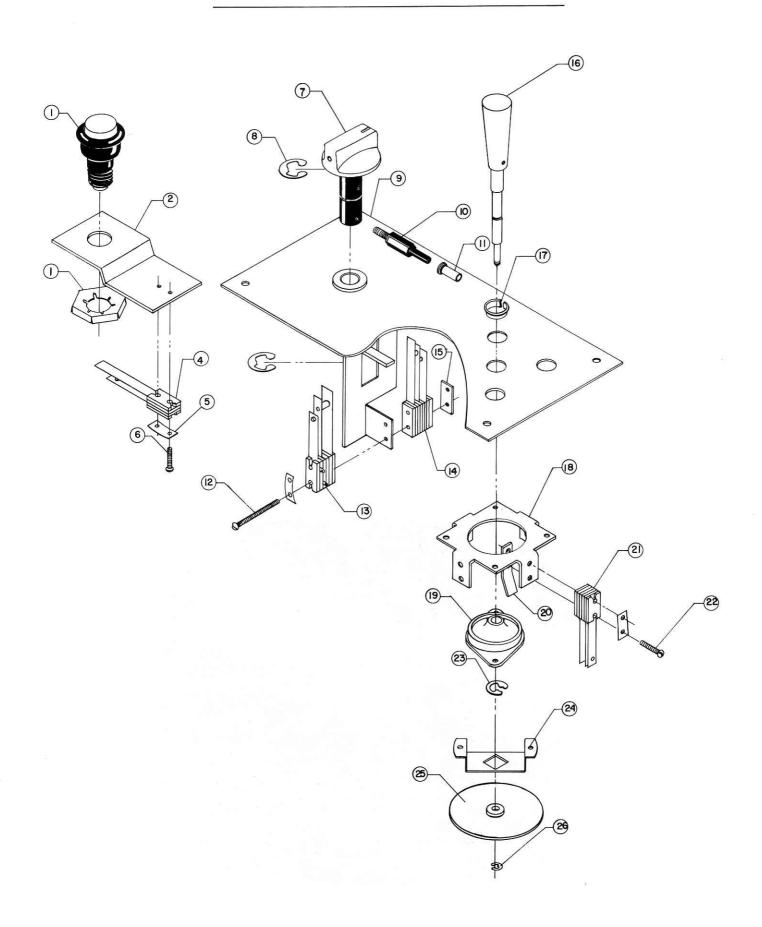
#### SERVICE BULLETIN

GAME: Tornado Baseball

The Tornado Baseball Up-Right and the Tornado Baseball Cocktail Table logic game board, P.C. 605-900, are not inter-changeable due to different control circuits. The above circuits are shown on game logic board schematic.

This does not effect the mother logic board, P.C. 80900.

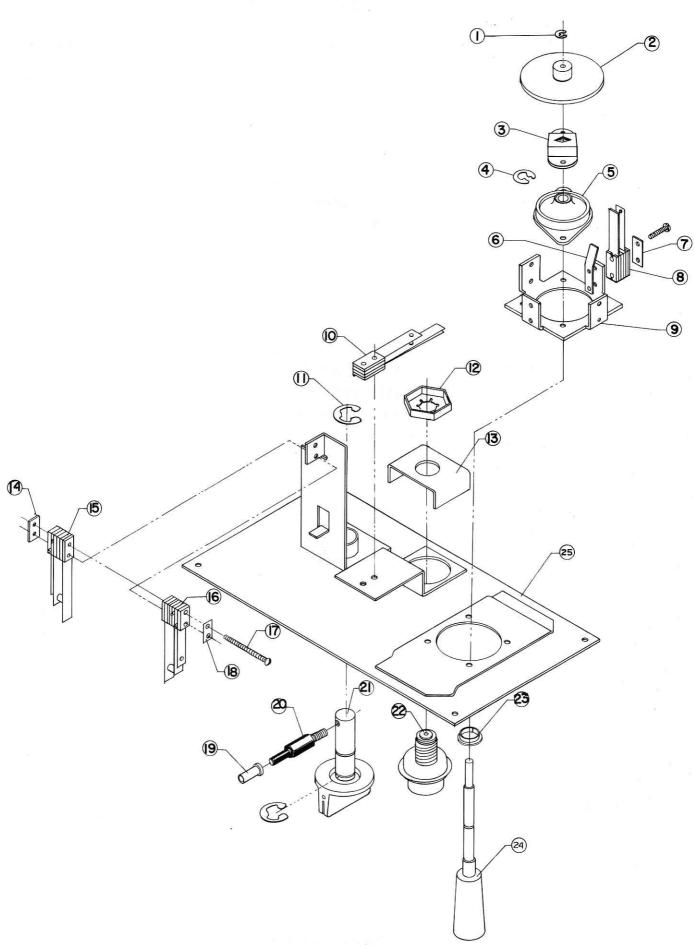




## NO. $0605-{\sf TORNADO}$ BASEBALL $-{\sf CONTROL}$ SHELF

# PRICE LIST ORDER BY PART NUMBER ONLY

0589-00010 0586-00107 0586-00036 0020-00202 0017-00101-0521 0605-00002 0017-00100-0050 0605-00009 0589-00700 0577-00703	PUSH BUTTON MOUNTING BRACKET (2) PUSH BUTTON SWITCH SWITCH PLATE 5-40 x 3/8 P.H. M.S. KNOB & SHAFT ASSY. "E" RING MOUNTING BRACKET ASSY.	3.30 EA. .40 EA. .70 EA. .20 EA. .20 EA. 3.80 EA. .20 EA. 3.30 EA.
0586-00036 0020-00202 0017-00101-0521 0605-00002 0017-00100-0050 0605-00009 0589-00700	PUSH BUTTON SWITCH SWITCH PLATE 5-40 x 3/8 P.H. M.S. KNOB & SHAFT ASSY. "E" RING MOUNTING BRACKET ASSY.	.70 EA. .20 EA. .20 EA. 3.80 EA. .20 EA.
0020-00202 0017-00101-0521 0605-00002 0017-00100-0050 0605-00009 0589-00700	SWITCH PLATE 5-40 x 3/8 P.H. M.S. KNOB & SHAFT ASSY. "E" RING MOUNTING BRACKET ASSY.	.20 EA. .20 EA. 3.80 EA. .20 EA.
0017-00101-0521 0605-00002 0017-00100-0050 0605-00009 0589-00700	5-40 x 3/8 P.H. M.S. KNOB & SHAFT ASSY. "E" RING MOUNTING BRACKET ASSY.	.20 EA. 3.80 EA. .20 EA.
0605-00002 0017-00100-0050 0605-00009 0589-00700	KNOB & SHAFT ASSY. "E" RING MOUNTING BRACKET ASSY.	3.80 EA. .20 EA.
0017-00100-0050 0605-00009 0589-00700	"E" RING MOUNTING BRACKET ASSY.	.20 EA.
0605-00009 0589-00700	MOUNTING BRACKET ASSY.	
0589-00700		3 30 EV
	DIM	0.00 LM.
0577 00702	PIN	.90 EA.
U0//-UU/U0	SLEEVING	.40 EA.
0017-00101-0534	5-40 x 1 3/8 R.H. M.S.	.20 EA.
0605-00006	SWITCH, OUTFIELD LEFT	1.40 EA.
0605-00005	SWITCH, OUTFIELD RIGHT	1.40 EA.
0520-00138	SWITCH PLATE	.20 EA.
0605-00001	HANDLE ASSY.	5.60 EA.
0017-00042-0018	NYLINER	.20 EA.
0597-00104	SWITCH MOUNTING BRACKET	2.10 EA.
0017-00009-0220	GROMMET (150PD-6)	2.50 EA.
0597-00113	GUARD STRIP	.40 EA.
0597-00004	CONTROLSWITCH	1.10 EA.
0017-00101-0527	5-40 x 5/8 P.H. M.S.	.20 EA.
0017-00100-0025	"E" RING	.20 EA.
0597-00106	STOP BRACKET BOTTOM	.50 EA.
0605-00004	WASHER & BUSHING — SUB ASSY.	.90 EA.
0017-00100-0015	"E" RING	.20 EA.
	0605-0006 0605-00005 0520-00138 0605-00001 0017-00042-0018 0597-00104 0017-00009-0220 0597-00113 0597-00101-0527 0017-00100-0025 0597-00106 0605-00004	0605-00006         SWITCH, OUTFIELD LEFT           0605-00005         SWITCH, OUTFIELD RIGHT           0520-00138         SWITCH PLATE           0605-00001         HAND LE ASSY.           0017-00042-0018         NYLINER           0597-00104         SWITCH MOUNTING BRACKET           0017-00009-0220         GROMMET (150PD-6)           0597-00113         GUARD STRIP           0597-00004         CONTROL SWITCH           0017-00101-0527         5-40 x 5/8 P.H. M.S.           0597-00106         STOP BRACKET BOTTOM           0605-00004         WASHER & BUSHING — SUB ASSY.



PAGE 8

MIDWAY MFG. CO.

## NO. $0607 - COCKTAIL\ TABLE - CONTROL\ SHELF$

# PRICE LIST

ORDER BY PART NUMBER ONLY

		T PART NUMBER ONLY	<del></del>
ITEM	PART Nº	DESCRIPTION	PRICE
1	0017-00100-0015	"E" RING	.20 EA.
2	0605-00004	WASHER & BUSHING ASSY.	.90 EA.
3	0597-00106	STOP BRACKET BOTTOM	.50 EA.
4	0017-00100-0025	"E" RING	.20 EA.
5	0017-00009-0220	GROMMET	2.50 EA.
6	0597-00113	GUARD STRIP	.40 EA.
7	0020-00202	SWITCH PLATE	.20 EA.
8	0597-00004	CONTROLSWITCH	1.10 EA.
9	0597-00104	SWITCH MTG. BRACKET	2.10 EA.
10	0586-00036	BUTTON SWITCH	.70 EA.
11	0017-00100-0050	"E" RING	.20 EA.
12		COMES WITH ITEM NO. 22	
13	0607-00102	SPACER	.60
14	0520-00138	SWITCH PLATE	.20
15	0605-00006	SWITCH, OUTFIELD LEFT	1.40
16	0605-00005	SWITCH, OUTFIELD RIGHT	1.40
17	0017-00101-0534	5-40 x 1 3/8 R.H. M.S.	.20 EA.
18	0020-00202	SWITCH PLATE	.20 EA.
19	0577-00703	SLEEVING	.40 EA.
20	0589-00700	PIN	.90 EA.
21	0605-00002	KNOB & SHAFT & ASSY.	3.80 EA.
22	0589-00010	PUSH BUTTON(COMES WITH ITEM NO.	4
	-	12 ALSO)	3.30 EA.
23	0017-00042-0018	NYLINER	.20 EA.
24	0605-00001	HANDLE ASSY.	5.60 EA.
25	0607-00001	CONTROL PANEL ASSY. W/CABLE	80.00 EA.
			A. SERVICES SES. BOURS. 028
	- #		
	34		
		a	
		1	

#### TORNADO BASEBALL - ADDITIONAL PARTS LIST

## PRICE LIST

### ORDER BY PART NUMBER ONLY

ITEM	PART Nº	DESCRIPTION	PRICE
	•	COCKTAIL TABLE (0607)	77
	0017-00003-0165	19" TV. MONITOR - MOTOROLA	390.00 EA.
	0017-00003-0032	SPEAKER	7.30 EA.
	0604-00900	PENTAGONAL GLASS	124.20 EA.
	0604-00901	LIGHT PANEL	1.30 EA.
	0607-00900-00SC	SILK SCREENED CARDBOARD	7.10 EA.
	0604-00903	19" TV. BEZEL	14.00 EA.
	0569-00001	SPEAKER BEZEL ASSY.	2.00 EA.
	0549-00128	SPEAKER GRILL	1.20 EA.
	0017-00041-0576	GASKET	.20 EA.
	0604-00101	CASH BOX	6.00 EA.
	0604-00102	CASH BOX COVER	2.40 EA.
	0601-00010	CASH BOX LOCK BRACKET	1.40 EA.
	0017-00102-0048	LEG LEVELER	.50 EA.
	0017-00103-0026	LEG LEVELER NUT	.20 EA.
	0604-00111	VENT GRILL	.30 EA.
	0017-00031-0002	SOCKET, LAMP	.20 EA.
	0017-00003-0052	LAMP	.40 EA.
	0017-00005-0046	BACK DOOR LOCK	3.40 EA.
	0017-00005-0051	LOCK PLATE	.40 EA.
	0017-00005-0042	CAM	.40 EA.
	0017-00003-0102	COUNTER	9.00 EA.
	0567-00003	P.C. BOARD MOUNTING ASSY.	1.70 EA.
	0591-00017	P.C. SUPPORT BRACKET ASSY. (SMALL)	.90 EA.
	0597-00012-0100	P.C. SUPPORT BRACKET ASSY. (R.H.)	3.10 EA.
	0597-00012-0002	P.C. SUPPORT BRACKET ASSY. (L.H.)	3.10 EA.
	0080-00001	HEAT SINK ASSY.	7.50 EA.
	0017-00102-0069	1/4 x 20 x 3 1/2 HEX HEAD BOLT	.20 EA.
	0017-00104-0039	3/4 x 9/32 x 1/16 FLAT WASHER	.20 EA.
	0604-00108	GLASS RETAINER	1.00 EA.
	0607-00103	FRONT RETAINER	6.00 EA.
	0604-00002	MOUNTING FRAME, HORIZONTAL	g 144ma
		ASSY.	4.40 EA.
	0604-00112	COOLING MOTOR	28.20 EA.
	0604-00111	VENT GRILL	.40 EA.

MIDWAY MFG. CO.

#### TORNADO BASEBALL - ADDITIONAL PARTS LIST

## PRICE LIST

ORDER BY PART NUMBER ONLY

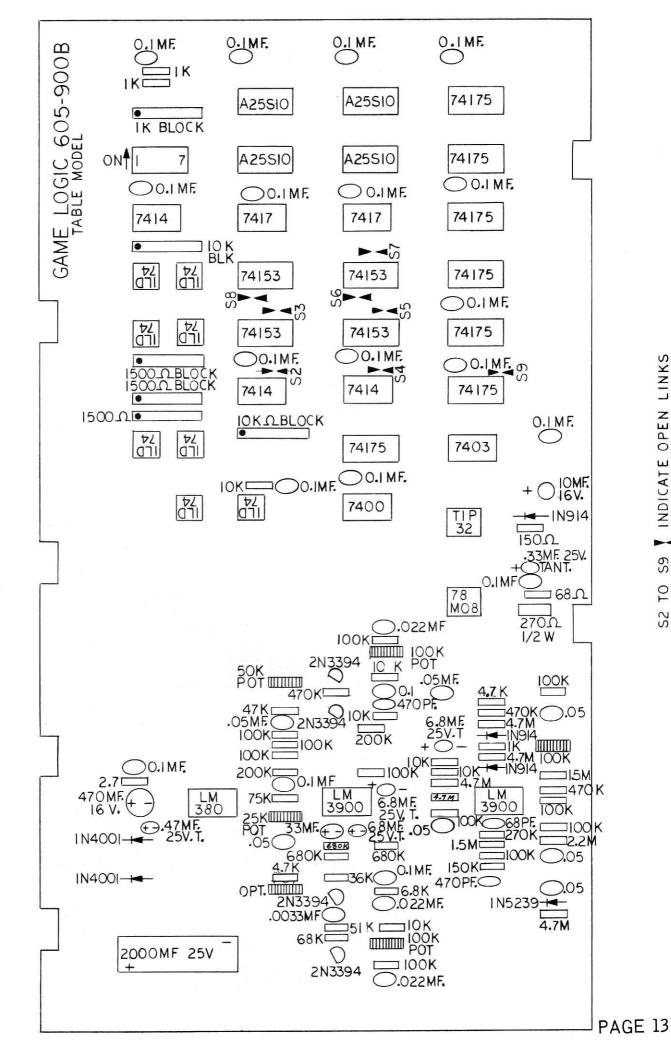
ITEM	PART Nº	DESCRIPTION	PRICE
#1	0607-00901	GREEN ACETATE COLOR MASK	4.20 EA.
		UPRIGHT CABINET (0605)	
	0605-00003	CONTROL SHELF ASSY. W/CABLE	90.50 EA.
	0605-00907	FRONT GLASS	11.60 EA.
1	0605-00907-00TE	TEMPERED FRONT GLASS	26.70 EA.
	0605-00010	FLOURESCENT FIXTURE ASSY	
		W/O BL-BULB	28.70 EA.
	0017-00003-0110	24" FLOURESCENT BL-BULB	7.00 EA.
	0017-00031-0002	SOCKETS	.20 EA.
	0017-00003-0052	LAMPS	.40 EA.
	0597-00012-0200	P.C. SUPPORT BRACKET ASSY. (L.H.)	3.10 EA.
	0605-00902-00SC	NAME GLASS	11.60 EA.
	0605-00907-00TE	TEMPERED FRONT GLASS	26.70 EA.
	0605-00902-00SC	NAME GLASS	13.60 EA.
	0605-00909	TINT OVERLAY	.20 EA.
	0605-00906	MIRROPANE MIRROR	71.50 EA.
	0537-00138	GLASS LIFT BRACKET 24"	2.60 EA.
	0605-00108	GLASS LOCK EXT.	.80 EA.
	0605-00104-0001	GLASS LOCK BRACKETS	1.70 EA.
	0017-00009-0009	TURN BUTTON	.20 EA.
	0090-00020-02BR	DOUBLE ENTRY COIN DOOR	104.00 EA.
	0090-00002-02BR	DOOR FRAME	7.80 EA.
	0566-00120	CASH BOX	6.00 EA.
	0566-00121	CASH BOX COVER	2.20 EA.
	0601-00010	CASH BOX LOCK BRACKET	1.40 EA.
	0017-00005-0046	BACK DOOR LOCK	3.40 EA.
	0017-00005-0051	LOCK PLATE	.40 EA.
	0017-00005-0042	CAM	.20 EA.
	0017-00003-0102	COUNTER METER	9.00 EA.
	0017-00003-0161	SPEAKER	6.00 EA.
	0569-00010-00BR	SPEAKER BEZEL	2.00 EA.
	0017-00041-0576	SPEAKER GASKET	.20 EA.
	0596-00137	SUPPORT CHANNEL SHIPPING	1.20 EA.
	0605-00010	FLOURESCENT FIXTURE ASSY.	28.70 EA.
			9

## TORNADO BASEBALL — ADDITIONAL PARTS LIST

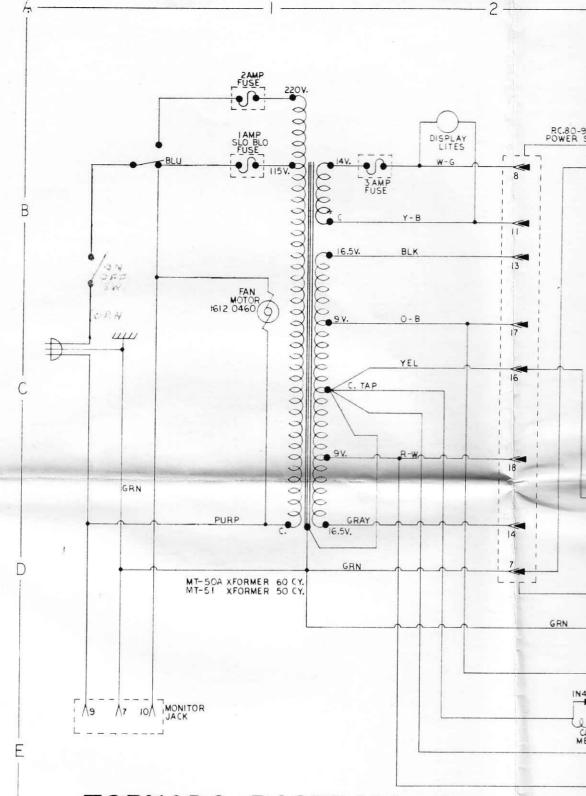
### PRICE LIST

# ORDER BY PART NUMBER ONLY

	UNDER BY PART NUMBER ONLY			
ITEM	PART Nº	DESCRIPTION	PRICE	
	0017-00003-0110	LAMP 24" FLOURESCENT BL-BULB	7.00 EA.	
	0017-00031-0015	LAMP HOLDERS	.60 EA.	
	0017-00003-0019	STARTER	.20 EA.	
	0017-00021-0079	STARTER HOLDER	2.00 EA.	
	0017-00021-0005	FLOURESCENT LOCKS	.30 EA.	
	0017-00041-0013	GROMETS	.20 EA.	
	0017-00003-0036	BALLAST	2.20 EA.	
	0567-00106-0100	SWITCH MTG. PLATE	.60 EA.	
	0572-00103	VENT GRILL	1.20 EA.	
li	0605-00107	FISHPAPER BARRIER	.60 EA.	
	0605-00003	CONTROL SHELF ASSY. W/CABLE	90.50 EA.	
	0597-00012-0100	P.C. SUPPORT BRACKET ASSY. (R.H.)	3.10 EA.	
	0605-00008	P.C. BD MTG. ASSY.	15.50 EA.	
	0567-00003	P.C. BD MTG. ASSY.	1.70 EA.	
	0017-00003-0140	MOTOROLA MONITOR	390.00 EA.	
	0161-00002	DAG SPG. ASSY.	1.50 EA.	
		Sec.		
1				
		(a) 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1		



89 ৶



# TORNADO BASEBALL

TABLE MODEL
MIDWAY MFG CO
10750 GRAND AVE
FRANKLIN PARK, IL 60137 JULY 1,1976

